ARJUNA JEE 2023

Mole Concept

DPP-06

1. The empirical formula of a compound is CH_2O. Its molecular weight is 180. The molecular formula of compound is

(1) C_4HO_4 (2) $C_3H_6O_3$

(3) $C_6H_{12}O_6$ (4) $C_5H_{10}O_5$

2. Determine the empirical formula of Kelvar, used in making bullet proof vests, is 70.6% C, 4.2%H, 11.8% N and 13.4% O:

(1) $C_7H_5NO_2$ (2) $C_7H_5N_2O$

(3) C_7H_9NO (4) C_7H_5NO

3. The hydrated salt $Na_2CO_3.xH_2O$ undergoes 63% loss in mass on heating and becomes anhydrous. The value of x is:

(1) 10 (2) 12

(3) 8 (4) 18

4. The percentage of nitrogen in urea is about

(1) 46 (2) 85

(3) 18 (4) 28

5. A gas is found to contain 2.34 grams of nitrogen and 5.34 grams of oxygen. Simplest formula of the compound is:

(1) N_2O (2) NO

(3) N_2O_3 (4) NO_2

6. An oxide (Fe_2O_n) of iron contains 70% iron by mass. Calculate value of *n*.

(1) 1 (2) 2

(3) 3 (4) 4

7. If mass % of oxygen in monovalent metal 'M' carbonate (M_2CO_3) is 48%, find atomic mass of metal?

(1) 20 (2) 40

(3) 30 (4) 10

8. Haemoglobin contains 0.33% of iron by weight. The molecular weight of haemoglobin is approximately 67200. The number of iron atoms (at. wt. of Fe = 56) present in one molecule of haemoglobin is

(1) 6 (2) 1

(3) 2 (4) 4

9. The empirical formula and molecular mass of a compound are CH_2O and 180g respectively. What will be the molecular formula of the compound?

(1) $C_9H_{18}O_9$ (2) CH_2O

(3) $C_6H_{12}O_6$ (4) $C_2H_4O_2$

10. If an iron oxide has 69.9 mass % of Fe (molar mass = 56.0 g mol^{-1}) and 30.1 mass% of oxygen, its empirical formula will be

(1) FeO (2) Fe_2O_3

(3) Fe_3O_4 (4) Fe_2O_6

Answer Key

1. (3)
2. (4)
3. (1)
4. (1)
5. (4)
6. (3)
7. (1)
8. (4)
9. (3)
10. (2)

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